

CHHATTISGARH ELECTRICITY REGULATORY COMMISSION

**(Terms and conditions for determination of generation tariff and related matters
for electricity generated by plants based on renewable energy sources)
Regulations, 2012, Dated: 27-07-2012 with amendments
Dated: 14-03-2013, 21-03-2016**

Sl. No.	Description	Summary
1.	Control Period/Review Period	5 Years (from the April 01, 2012 to the end of the financial year 2016-17)
2.	Tariff Period	<ol style="list-style-type: none"> 1. Tariff period for various renewable energy projects commencing COD after April 01, 2012 and for whom generic tariff is applicable, shall be considered as 12 years. There will be no revision in tariff during the tariff period. 2. For existing RE plants who have achieved COD before April 01, 2012 tariff period will be same as control period i.e. five years.
3.	Project Specific Tariff	<ol style="list-style-type: none"> 1. Biomass projects/co-generation, rate for power supplied to a licensee prior to declaration of date of commercial operation (infir power) shall be equal to energy (variable) charges and rate for non –firm power shall be equal to energy (variable) charges plus 30 paise per unit (kWh). 2. For other projects which doesn't have fuel cost component including hydro projects, during the stabilization the generator shall be entitled only for the recovery of statutory charges actually paid to State Government and cost incurred towards O&M and interest shall be part of the Capital Cost.
4.	Tariff Structure	<ol style="list-style-type: none"> 1. The tariff for renewable energy technologies shall be single-part tariff consisting of the following fixed cost components: <ol style="list-style-type: none"> (a) Return on equity; (b) Interest on loan capital; (c) Depreciation; (d) Interest on working capital; (e) Operation and maintenance expenses; 2. RE technologies having fuel cost component, like biomass power projects and non-fossil fuel based co-generation projects, single-part tariff with two components, viz., fixed cost component and fuel cost component, shall be determined.
5.	Tariff Design	<ol style="list-style-type: none"> 1. The generic tariff shall be determined on levellised basis for the Tariff Period. 2. Levellisation shall be carried out for the 'useful life' of the renewable energy project while tariff shall be specified for the period equivalent to "Tariff Period"
6.	Discount Factor for Levellised Tariff	Discount factor shall be equivalent to Post Tax weighted average cost of capital Cost.
7.	Despatch Principles	All renewable energy power plants except for biomass power generating station shall be treated as 'MUST RUN' power plants and shall not be subjected to scheduling and merit order despatch principles.
8.	Banking	<ol style="list-style-type: none"> 1. Banking of energy for RE generating plants would be permissible for three months for those plants which have not entered into agreements with distribution licensee for supply of electricity generated in full to the distribution licensee and 2. 2% of the energy will be adjusted by distribution licensee while releasing the energy by distribution licensee as banking charge per month.

9.	Capital Cost	Capital Cost shall be inclusive of all capital work including plant and machinery, civil work, erection and commissioning, financing costs, preliminary and pre-operative expenses, interest during construction, and evacuation infrastructure up to inter-connection point.			
		Sl. No.	Technology	Capacity	Capital Cost (in Lakh/MW)
		1.	Wind Energy Projects		575
		2.	Small Hydro projects	below 5 MW	600
				5 MW to 25 MW	550
		3.	Biomass Power Projects based on Rankine Cycle Technology	based on using water cooled condenser	445
		4.	Non-fossil fuel based Cogeneration Projects		420
		5.	Solar PV Power Projects		1000
6.	Solar Thermal Power Projects		1300		
10.	Debt Equity Ratio	70:30 For project specific tariff, If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.			
11.	Loan and Finance Charges	Loan Tenure-12 Years For the computation of tariff the normative interest rate shall be considered as average of base rate (lending rate) of State Bank of India prevalent on October 1 st of the previous year of the tariff determination year plus 300 basis points.			
12.	Depreciation	<ol style="list-style-type: none"> The Salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the Capital Cost of the asset. The depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 13th year onwards on 'Straight Line Method'. 			
13.	Return on Equity	<ol style="list-style-type: none"> The value base for the equity shall be 30% of the capital cost. The normative Return on Equity shall be: <ol style="list-style-type: none"> 20% per annum for the first 10 years. 24% per annum 11th year onwards. 			
14.	Interest on Working Capital	Interest on Working Capital shall be at interest rate equivalent to base rate (lending rate) of State Bank of India prevalent on October 1 st of the previous year of the tariff determination year plus 350 basis points.			
15.	Rebate	<ol style="list-style-type: none"> For payment of bills of the generating company through letter of credit, a rebate of 2% shall be allowed. Where payments are made other than through letter of credit within a period of one month of presentation of bills by the generating company, a rebate of 1% shall be allowed. 			
16.	Late payment surcharge	In case the payment of any bill for charges payable under these regulations is delayed beyond a period of 60 days from the date of billing, a late payment surcharge at the rate of 1.25% per month shall be levied by the generating company.			
17.	Subsidy	The Commission shall take into consideration any capital subsidy/ incentive/grant offered by the Central or State Government, including accelerated depreciation benefit if availed by the generating company, for the renewable energy power plants while determining the project specific tariff under these Regulations.			

18.	Cess, Duties and Water charges/statutory charges	In case of SHP, water charges as levied by the State Government shall not be included in the tariff. It is to be paid separately and shall be pass through on actual incurred basis.			
19.	Capacity Utilisation Factor/Plant Load Factor	Sl. No.	Technology	CUF/PLF	
		1.	Wind Energy projects	Annual Mean Wind Power Density (W/M ²)	
				Upto 200	20%
				201-250	22%
				251-300	25%
				301-400	30%
				>400	32%
		2.	Small Hydro projects	30%	
		3.	Biomass Power Projects based on Rankine Cycle Technology	80%	
		4.	Non-fossil fuel based Cogeneration Projects	38% (O.D.-150)	
		5.	Solar PV Power Projects	19%	
		6.	Solar Thermal Power Projects	23%	
20.	Operation and Maintenance Expenses	Sl. No.	Technology	Capacity	O&M Expenses (in Lakh/MW)
		1.	Wind Energy project		9.00
		2.	Small Hydro projects	below 5 MW	20.00
				5 MW to 25 MW	14.00
		3.	Biomass Power Projects based on Rankine Cycle Technology		24.00
		4.	Non-fossil fuel based Cogeneration Projects		16.00
		5.	Solar PV Power Projects		11.00
6.	Solar Thermal Power Projects		15.00		
		Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 5.72% per annum over the tariff period to compute the tariff.			
21.	Auxiliary Consumption	Sl. No.	Technology	Auxiliary Consumption	
		1.	Small Hydro projects		
		2.	Biomass Power Projects based on Rankine Cycle Technology	10%	

		3.	Non-fossil fuel based Cogeneration Projects	10%
		4.	Solar PV Power Projects	
		5.	Solar Thermal Power Projects	10%
22.	Fuel	Technology	Parameters	Quantity
		Biomass Power Projects based on Rankine Cycle Technology	Station Heat Rate	4000 kCal/kWh
			Calorific Value	3338 kCal/kg
			Fuel Cost	2476 Rs/MT (during 1 st Yr)
			Fossil Fuel	monthly fuel usage statement
		Non-fossil fuel based Cogeneration Projects	Station Heat Rate	3600 kCal/kWh
			Calorific Value	2250 kCal/kg
			Fuel Cost	1583 Rs/MT (during 1 st Yr)
			Fossil Fuel	15%